

Terrestrial Ecological Evaluations

Issue

What rule revisions are needed (if any) to clarify and update the terrestrial ecological evaluation process under the Model Toxics Control Act (MTCA)?

Problem Statement

The purpose of terrestrial ecological evaluations (TEEs) as required by the MTCA cleanup regulation is ensuring protection of plants and animals. Since 2001, the TEE process has been used at a wide range of sites. While Ecology does not maintain statistics, most sites appear to be qualifying for an exemption. Most of the remaining sites have performed a simplified TEE. Only a handful of sites have conducted site-specific TEE's. Given this distribution, it appears that the overall process is working as originally intended. However, a number of implementation problems appear to contribute to cleanup delays and inefficiencies:

- People are sometimes unaware of the TEE provisions until late in the remedial investigation/feasibility study.
- Many consultants and site managers find it difficult to understand and interpret the requirements for performing a TEE.
- The MTCA cleanup regulation lacks a clear roadmap explaining how the results of the TEE can be used to establish cleanup levels and select remedies.
- The TEE soil screening values do not reflect toxicity data developed since the mid-1990s.

Overview

The TEE sections (WAC 173-340-7490 through 7494) were added to the MTCA rule in 2001 to provide a process for evaluating impacts to plants and wildlife.¹ This implemented recommendations from the MTCA Policy Advisory Committee to the Washington legislature.²

The purpose of a terrestrial ecological evaluation is to protect land-based plants and animals from exposure to contaminated soil. There are three options:

¹ This Issue Summary uses the terms MTCA cleanup regulation and MTCA rule interchangeably; both refer to Chapter 173-340 WAC.

² Final Report of the Model Toxics Control Act Policy Advisory Committee, December 15, 1996.
http://www.ecy.wa.gov/programs/tcp/mtca_pac/mtcapac.html

1. Evaluate and document whether an exemption applies. A site with very little habitat or little opportunity for plants and animals to be exposed to the contamination is exempt from conducting further evaluation.
2. Determine whether the site qualifies for a simplified TEE. Sites with limited habitat of modest quality and no endangered or threatened species qualify for the simplified TEE.
3. Conduct a site-specific TEE. This is required for sites with high quality habitat or endangered or threatened species. This may also be voluntarily conducted at any site.

New Scientific and Regulatory Information Since 2001 Rule Revisions

A large amount of new scientific information has been developed on the toxicity and bioavailability. Over the last several years, EPA has published Ecological Soil Screening Levels (EcoSSLs) for 17 metals and 4 organic compounds frequently found at Superfund sites.

Rulemaking Options Being Considered

Ecology is considering several options for addressing this issue during the current rulemaking process. These include:

Editorial and Simple Structural Changes: Under this option, Ecology would not make any significant revisions to the MTCA rule. Ecology would make editorial and structural changes to clarify the TEE requirements. Examples of these types of changes are listed in Table 1 below.

Updating the Ecological Screening Tables: Under this option, Ecology would revise the soil screening concentrations and wildlife exposure model based on current scientific information and EPA regulatory guidelines.³ Examples of these types of changes are listed in Table 2 below.

Integrating, Policy Clarifications and Decision Roadmap: Under this option, Ecology would make modest revisions to the MTCA rule to better integrate the TEE process (for example, clarifying how the TEE process fits into setting cleanup standards and remedy selection). Ecology would clarify certain policy issues. Examples of these types of changes are listed in Table 3 below.

Combination: Under this option, Ecology would make revisions to integrate the TEE process with other parts of the rule, clarify certain policy issues and update the TEE tables using current scientific information and regulatory guidance.

³ WAC 173-340-900 Tables 749-2 through 749-5.

Factors to Consider When Selecting an Option

Developing amendments to the MTCA cleanup regulation will require considering and balancing a number of issues and interests. Ecology believes that the following factors need to be considered when evaluating rulemaking options:

- Issues identified when implementing the current rule provisions.
- Whether the changes result in a more understandable process.
- New scientific information on the bioavailability and toxicity of hazardous substances developed since 2001.
- New regulatory policies and guidance developed by EPA and other states.
- Whether particular options comply with the requirements of the Administrative Procedures Act.

Table 1: Editorial and Simple Structural Changes to Clarify TEE Requirements		
Issue	Under Consideration	Comment
<p><u>Rule Structure:</u> Parts of Sections 7490-7494 are confusing and repetitive.</p>	<p>These Sections would benefit from targeted reorganization, such as:</p> <ul style="list-style-type: none"> • Consolidating and moving provisions that pertain throughout the TEE Sections to Section 7490, such as provisions related to institutional controls. • Moving the criteria for site-specific TEE's to the site-specific TEE Section (7493). • Moving the TEE provisions closer to the RI/FS requirements. 	<p>Editorial changes.</p>

Table 2: Updating TEE Tables Based on New Scientific Information		
Issue	Under Consideration	Comment
<p><u>Tables 749-2 and 749-3:</u> These tables no longer reflect the latest scientific information.</p>	<p>There are a number of options that could be used to update these tables:</p> <ul style="list-style-type: none"> • Use threshold reference values (TRVs) data and bioaccumulation factors (BAFs) in EPA database to update table values using the same policies and procedures that were used in 2001. • Use TRVs based on EPA's approach of basing them on NOAELs instead of MTCA's approach of using the LOAELs. This would be a policy change. • Substitute EPA TEE screening values for values in these tables, where available. EPA uses different policy choices and a wildlife exposure model than was used in MTCA. 	<p>EPA has not established EcoSSLs for all of the hazardous substances in the MTCA tables.</p> <p>Using EPA EcoSSL's policy would result in some values being based on different policies and procedures than other values in the MTCA tables.</p>

<p><u>Dioxins</u>: The TEE tables (Table 749-2 & 3) contain dioxin and furan screening levels but no reference is made to use of TEFs. This implies the total of all dioxin and furan congeners must be compared against these screening levels.</p>	<p>Should the rule include a table of mammalian toxicity equivalency factors (TEFs) from the World Health Organization (WHO) and a footnote describing their use for TEEs?</p>	<p>This is consistent with current practice.</p>
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Table 3: Integration, Policy Clarifications and Decision Roadmap		
Issue	Under Consideration	Comment
<p><u>Undeveloped Land Definition</u>: It is unclear what types of “roads” qualify for dividing up habitat.</p>	<ul style="list-style-type: none"> Should the language be amended to incorporate WSDOT road classifications? <p>See: www.wsdot.wa.gov/mapsdata/todo/functionalclass.htm</p>	<p>This is basically a question of whether or not the road disrupts the activities of potential receptor species at the site. Even a road that is heavily traveled during daylight hours may not disrupt habitat if seldom used at night.</p>
<p><u>Net environmental benefit</u>: Sometimes the soils and sediments that are contaminated are located in heavily forested areas or wetlands that would be destroyed to achieve protective cleanup levels. The current rule doesn’t allow this to be factored into cleanup level determinations.</p>	<ul style="list-style-type: none"> Should the rule allow the potential impacts to existing species to be taken into account when establishing cleanup levels based on ecological protection and/or selecting remedies? 	<p>Could lead to less complete cleanups in ecologically sensitive areas. Institutional controls are ineffective in controlling plant and animal exposures. May need to compensate for natural resource damages to habitat productivity.</p>
<p><u>Point of Compliance</u>: The relationship between the remedy selection process and use of a conditional POC is unclear.</p>	<ul style="list-style-type: none"> Should the rule clarify that conditional points of compliance must be justified with a disproportionate-cost analysis. 	<p>Conditional points of compliance could also be useful in preserving high-value habitat within the site.</p>
<p><u>Determining Compliance</u>: TEE Sections do not explicitly state that compliance monitoring requirements and statistical methods in Section 740 apply to TEE soil cleanup levels. This has been questioned at some sites.</p>	<ul style="list-style-type: none"> Should the rule be revised to clarify that Section 740(7) applies to TEE soil cleanup levels? 	<p>May need flexibility for site-specific compliance method requirements (e.g., different compliance methods may be needed for wetland restoration).</p>
<p><u>“Site Definition”</u>: When determining the size of a site under Section 7491, some have confused “site” with “property”.</p>	<ul style="list-style-type: none"> Clarify provision. 	<p>“Site” is any area hazardous substances have come to be located and is not limited by the property boundary.</p>

Table 3: Integration, Policy Clarifications and Decision Roadmap (continued)		
Issue	Under Consideration	Comment
<u>Simplified TEE's</u> : The role of the table values and bioassays in determining if a TEE can be ended and in establishing cleanup levels is unclear.	<ul style="list-style-type: none"> Clarify provision. 	
<u>Site-Specific TEE's</u> : Sites with extensive off-property prime habitat may not be required to conduct a site-specific TEE when the habitat is off the PLP's property.	<ul style="list-style-type: none"> Should the rule be revised to clarify that sites with such habitat must do a site-specific TEE? 	Changes are required to protect ecological receptors that may use nearby contaminated areas.
<u>Intermittent Streams and Wetlands</u> : It is unclear what cleanup standard applies to the substrate in intermittent streams and wetlands: soil or sediment.	<ul style="list-style-type: none"> Apply the more stringent of the MTCA soil standards (TEE or Human Health) and sediment standards to intermittent/seasonal streams and wetlands? 	This issue is not limited to TEEs. What standard to apply may differ depending on how long standing water is present and other standards used to delineate wetlands/intermittent streams.
<u>Tables 740-1 and 745-1</u> : The TEE requirements are sometimes ignored because they are not captured in this table.	<ul style="list-style-type: none"> Should the Method A tables include a TEE column and appropriate descriptive footnotes? If yes, which screening values (Table 749-2 or 749-3) should be used? 	If the Table 749-2 values are used, most TEE values will be less stringent than the current Method A values. Use of these values would be consistent with the intent that Method A be used for simple sites.